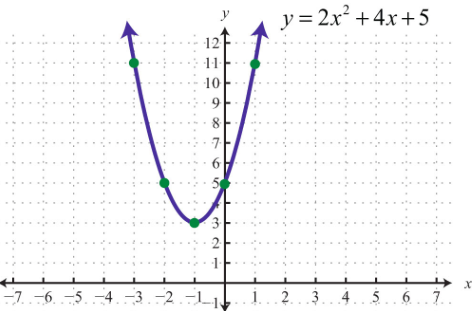
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| Mr. Michael T. Davis (I will see you on Friday)  Pre-Calculus  The substitute should not collect this from you. | Review of Algebra II  In-Class, August 24-25, 2016  ANSWER ALL QUESTIONS WITHOUT CALCULATOR |

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| --- |
| Name: |

1. The graph of the function  is shown below.
   1. Explain why the graph represents a function.

* 1. What is the domain of the function?
  2. What is the range of the function?

* 1. What is the value of ?
  2. Solve
  3. At what values of *x* does the graph cross the *x*-axis?
  4. At what value of *y* does the graph cross the *y*-axis?



1. On the coordinate plane to the right, carefully graph the line with equation . Please show work.



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1. A line is graphed on the coordinate plane below. Graph a 2nd line that contains the point  and is perpendicular to the first line. Please show work.
2. A linear function contains the two ordered pairs  and . Determine an equation of the line in any form. Please show work.
3. A linear function has equation . Write the equation in slope-intercept form. Then write the slope of the line, the coordinates of the y-intercept, and the coordinates of x-intercept. Please show work.

Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slope:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Y-intercept:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

X-intercept:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Daniel’s cell phone has 60% of the battery energy remaining after being on for four hours. After six hours, he has only 40% of the battery energy remaining. Assume that the battery decreases energy in a linear fashion. After how many hours will his battery be dead? Please show work.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Rewrite  in standard form. Please show work.

Equation:

1. Use factoring to solve the equation . Please show work.

Factored Polynomial: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Solution Set: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. A parabola is graphed on the coordinate plane as shown. Write an equation of the parabola in each form indicated. Please show work.

a. Vertex Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. Standard Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. Intercept Form: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Carefully, draw the graph of a parabola that opens up, has no *x*-intercepts (no real zeroes), and has its vertex on the y-axis. Then, write an equation of your parabola in any form you choose. Please show work.

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. The graph shown to the right represents the parabola of the parent quadratic function . On the same x-y plane, draw a transformed parabola that is the result of shifting  down 5 units and 3 units to the left. Write an equation for this transformed (shifted) graph. Please show work.

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



1. Graph . Please show work.

1. Graph the function . Please show work.
2. For the each function  and , determine the coordinates of the *y*-intercept of its

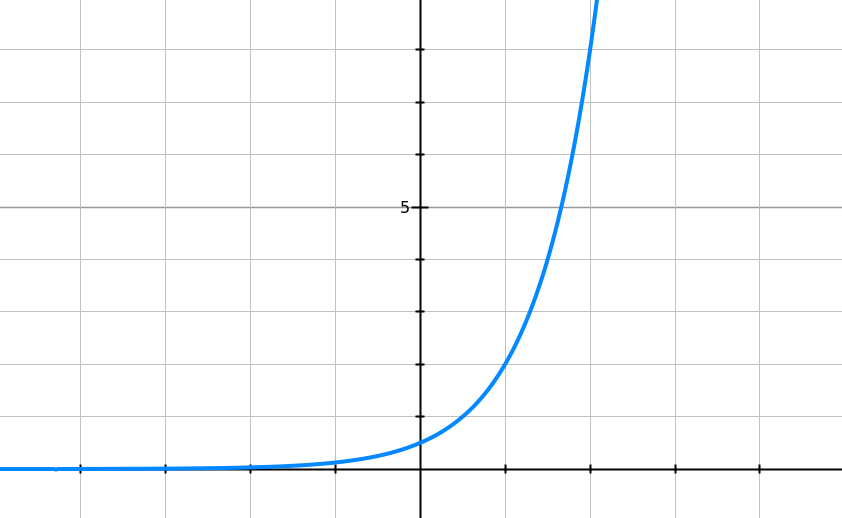
graph. Are they different or are they the same? Please show work.

Y-intercept of : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Y-intercept of : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circle one: Same different

1. Write an equation for the function whose graph is shown below. Please show work.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write an equation of the exponential function with a graph containing  and . Please show work.

Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. For the sequence 4, 9, 14, 19, . . . determine the following. Please show work.
2. the common difference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. whether the sequence is arithmetic or geometric: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. the 8th term: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. For the sequence 2, 6, 18, 54, . . . determine the following. Please show work.
6. the common ratio: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. whether the sequence is arithmetic or geometric: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. the 8th term: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Write the expression in simplified radical form . Please show work.
10. Multiply and simplify . Please show work.
11. Solve . Please show work.
12. Solve . Please show work.
13. Find 35% of 80. Please show work. Please show work.
14. Find 120% of 50. Please show work. Please show work.
15. Simplify each expression (you answer should not contain negative exponents). Please show work.
    1.  b)  c) 
16. Simplify each expression. Please show work.
    1.  b) 
17. Simplify each expression. Please show work.
    1.  b) 
18. Circle all the functions that represent exponential growth. Please explain why?
    1.  b.  c.  d. 
19. The rabbit population on Bunny Island is 6,710 today. If the population over the next year increases by 30%, then what will be the size of the population in one year? Please show work.